National Institute of Environmental Health Sciences

Responses to climate change and farming policies by rural communities in northern China: A report on field observation and farmers' perception in dryland north Shaanxi and Ningxia

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Abstract:

To address land degradation and rural poverty the Chinese government has put in place a series of land conversion programmes in the Loess Plateau area in northern China. In addition to problems arising from unsustainable land use, water resource availability driven in part by climatic forcing is also a threat to livelihoods in this region. To understand climate impacts on farming practice in poor areas of China, field observation and village reconnaissance took place in the summer of 2009 in three selected counties of Shaanxi and Ningxia Province, northern China. Semi-structured interviews were undertaken with householders in rural communities aiming to explore the impacts of recent climate and environmental changes and the role of land management practices on individual and community livelihood incomes as well as individual understanding and engagement with these concepts. The findings were complemented with secondary agricultural, economic and climatic data from the study regions. Respondents argued that land conversion programmes improved income potential, sustainability of livestock grazing and environmental quality in the region. However, water availability was thought to increasingly limit agriculture and human wellbeing in some of the regions with water resources becoming notably scarcer. Understanding of climate change as a concept varied amongst farmers potentially hampering the ability to adapt existing farming practices to maximise livelihood incomes sustainably. Positive effects of the government's land management schemes were unevenly distributed within villages and amongst regions, often linked to a lack of knowledge transfer and shared resources resulting in marginalised households and/or communities. Off-farm labour (in many cases relating to young adult rural to urban migration) appears a crucial source of income for households in the study region. Respondents in Ningxia expressed reservations about the future prospect of productive farming if the water availability continued to diminish.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Security, Food/Water Security

Extreme Weather Event: Drought

Food/Water Security: Agricultural Productivity

Geographic Feature: ☑

resource focuses on specific type of geography

Rural

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: China

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Other Vulnerable Population: Rural communities

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified